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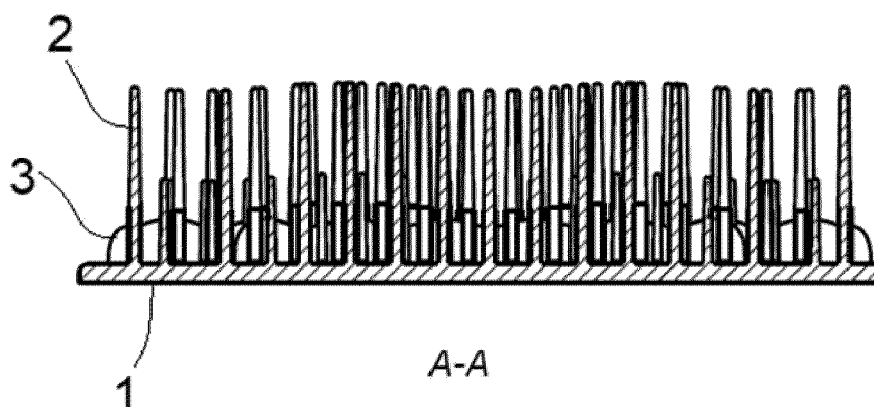
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(54) **BRUSH FOR UNTANGLING HAIR**

(57) The invention relates to a brush for untangling hair, comprising a base (1) made of a plastic material, attached to a handle (5), in which, on the outer face thereof, a series of bristles (2) made of a flexible and elastic plastic material are introduced, anchored or integrated, which on the outer face of said base (1), at a height less than that of the bristles (2), a surface (3)

protrudes occupying at least part of the surface of said base (1), preventing the hair from passing through the base of the bristles (2) during brushing, thus making it easier for the same to remain at an intermediate height, where the bristles (2) are arched or bent, so that when coming across an impediment, the hair can continue to easily come out, sliding and becoming untangled.

Fig. 1



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Description

Technical field

[0001] The object of the invention is a brush for untangling hair, without tugging or breaking the hair, which makes it easy for anyone to use, including children. Thus, the sector of this object is that of hairbrushes.

State of the art

[0002] Up to the present, brushes for untangling hair, which are considered more appropriate or efficient, regardless of the design of the handle structure, are ones in which the crests, conveniently distributed, are single-bristle, and the most common ways of attaching them are: Integral, when the support or base and the bristles constitute a single part of the same material. Inserted, when the filament is attached inside a hole, with a strap, or by using pressure on the bristle, in this case the hole is elastic and has a smaller size than the bristle.

[0003] Document US2607064A describes a hairbrush made of a flexible and elastic plastic material that includes a handle on one side and bristles on the opposite side, made of the same material, integrated and moulded in the same body.

[0004] The disclosure of these types of brushes has led to the fact that most hairbrushes are currently made up of a plurality of flexible plastic bristles, in some cases at different heights, in order to restrict the number of bristles that are in contact with the hair and thereby reduce the resistance of the tangles. Most of the plastic bristles used in hairbrushes have a frustoconical configuration, which makes it easier for them to bend in any direction and more on the outer part than at the base, where they are attached to the body of the brush.

[0005] The term "bristles", as used herein, is intended to mean the plastic filaments that protrude from the base of the brush into which they are integrated, generally forming a single body with the same. The reference to the length of said bristles must be interpreted as the length of the bristles protruding from the body or base of the brush, that is, the effective length of said bristles.

[0006] EP3432763A1 discloses a hairbrush having a specific arrangement of bristle rows shaped in substantially elliptical (i.e. oval) cross section, so as to bend better in one direction than another.

[0007] EP3254585A1 proposes a brush for untangling and grooming hair that includes a brush body and several rows of plastic bristles, between which several rows of bristle tufts are located which extend spatially separated from the rows of plastic bristles.

[0008] EP2124668A1 describes a device for untangling hair that includes a plurality of substantially parallel flexible bristles, made of a soft plastic material, which protrude from the base or body of the brush. The invention resides in the fact that said bristles are arranged in such a way that part of them have a shorter length,

interspersed with other bristles having a standard length, thus creating an undulating surface on the free end, which supposedly untangles hair to a greater extent than a brush with a flat surface of the bristles thereof.

[0009] Analysing the behaviour of the bristles of a brush when brushing hair, it has been observed that bristles bend due to the resistance provided by the tufts, either because the hair is tangled or knotted. Brushes for untangling hair existing in the state of the art are generally characterised in that there is a certain flexibility in the bristles, which allows them to bend in the opposite direction to the pull of the brush, facilitating the orientation thereof in the same direction as the hair and thereby the exit thereof without tugging or breakage. However, at the intersection of the bristles with the base or part that supports them, when they are bent, they maintain an area at the base of the bristles in a straight position, without flexing or bending, which prevents the tangled or knotted hair located in this area from coming off the brush without pain or breaking.

[0010] The brushes known up to the present, which are designed for untangling hair of people or pets, do not have elements that impede the support of the hair at the base where the bristles begin or are attached, which is an area where the same cannot flex or bend, which is why the knotted or tangled hair found in this area cannot find a way out without tugging or without part of the hair being pulled out.

Description of the invention

[0011] In order to achieve the proposed objectives, mentioned in the previous section, the invention proposes a brush for untangling hair, without tugging, which has the features of claim 1.

[0012] The invention proposes structuring an environment in the area of the bristles, which either from the beginning of the hole into which the bristles are inserted or from the base of the integral bristles, allows that when the bristles bend because the hair is tangled or knotted, they prevent the hair from reaching the base of the same, where there is a height of the bristle which remains practically vertical, preventing the hair from coming out unless it breaks or is pulled out, with the corresponding tugs and pain. This is achieved with the incorporation of elements which can be called partitions or limiters, attached or movable, regardless of the design, size, material and placement thereof.

[0013] In essence, in the base in which the bristles of the brush are introduced, anchored or integrated, the invention envisages a protruding surface at a height less than that of said bristles, which occupies at least part of the surface of said base, in order to prevent the hair from passing through the base of the bristles during brushing and thus make it easier for the same to stay at an intermediate height, where the bristles are arched or bent, so that when coming across an impediment, the hair can continue to easily come out, sliding and becoming un-

tangled.

[0014] The surface that protrudes from the base where the bristles that make up the brush are located can be situated around or between the bristles, and can be made up of continuous or discontinuous partitions, either rigid or flexible, attached or removable, with a constant or variable height. It can even affect almost the entire surface of the base, as long as the hair does not access the base where the bristles are attached or originate, so that it only runs through the outer area of the bristles, which is more flexible.

Description of the drawings

[0015] As a complement to the description provided herein, and for the purpose of helping to make the features of the invention more readily understandable, the present specification is accompanied by a set of drawings which, by way of illustration and not limitation, represent the following:

Figures 1 and 2 show a plan view and the A-A section made according to a longitudinal plane of an embodiment of the hairbrush of the invention.

Figures 3 and 4 show a plan view and the A-A section made according to a longitudinal plane of a second embodiment of the brush of the invention.

Figure 5 represents both plan and elevation views of the complementary part (4) that forms part of the brush in Figures 3 and 4.

Figures 6 and 7 respectively show a front view and longitudinal A-A section of a third embodiment of the brush of the invention.

Figures 8 and 9 show a plan view and the A-A section made according to a longitudinal plane of a new variant embodiment of the brush of the invention.

Embodiment of the invention

[0016] As can be seen in the referenced figures, the brush for untangling hair object of this invention is of the type that comprises a base (1) made of a plastic material, which is attached to a handle (5) by means of any conventional means. This base (1), on the outer face thereof, has a series of bristles (2) made of a flexible and elastic plastic material, which are introduced, anchored or integrated into said base (1).

[0017] According to an important feature of the invention, a surface that occupies at least part of the surface of said base (1) protrudes from the outer face of said base (1) at a height less than that of the bristles (2), which prevents the hair from passing through the base of the bristles (2) during brushing, facilitating the exit thereof from the brush without tugging or breaking the hair. The

protruding surface of the base (1) accepts various configurations, as can be seen from the embodiments described below.

[0018] Figures 1 and 2 show the protruding surface of the base (1), which protrudes in the same direction as the bristles (2), is made up of at least one partition (3), transverse with respect to the direction of movement of the hair during brushing, or longitudinal with respect to an elongated brush, as in most of the configurations of brushes. In the cited example, two separate partitions (3) can be seen along the periphery of the base (1), in addition to two other partitions (31) located on the inside of the surface of the base (1), parallel to the periphery of said base.

[0019] The fourth embodiment, depicted in Figures 1 and 2, envisages a series of partitions (3, 31) that are integrated and form a single body with the base (1) and the bristles (2).

[0020] Figures 3-5 show an embodiment in which a set of transverse partitions (4, 41) form a body that is completely independent from the base (1). In this embodiment, this body is provided with projections (42) or other similar tongue-and-groove means on the bottom thereof that allow this part to be attached to the base (1) or temporarily removed, for example to clean the brush and to be subsequently placed back in the operative position, as shown in Figures 3- 4.

[0021] In this second embodiment, partitions (4, 41) similar to those of the previous embodiment can be observed, also protruding from the base (1) in the same direction as the bristles (2), transversely with respect to the direction of movement of the hair during brushing. In this embodiment, a peripheral partition (4) and a partition (41) located on the inside of the surface of the base (1), parallel to the periphery of said base (1), can also be seen. In this embodiment, the partitions (4, 41) are closed and are joined together to form a body independent from the base, as shown in Figure 5.

[0022] Figures 6 and 7 represent a third embodiment of the brush of the invention. In these figures, it can be seen how the surface (11) that protrudes from the base in the same direction as the bristles (2) is made up of the base (1) itself, which in this embodiment has two levels, a lower one defined by holes or cavities in which the bristles (2) are introduced, anchored or integrated, and an upper one, at a height lower than that of the bristles (2), which forms the protruding surface (11) that prevents the hair from passing through the base of the bristles (2) when brushing. This embodiment also fulfils the objective of the invention by preventing the hair from reaching the base where the bristles originate or are attached and making it so it only runs along the most extreme area of the same, which is the most flexible, and therefore facilitates the passage and exit of the hair from the brush.

[0023] Lastly, Figures 8-9 show a variant embodiment of Figures 1- 2. In this case, the base (1) comprises several transverse partitions (3), concentric with respect to said base (1), which define a series of channels (32)

between the same, with a width similar to that of the bristles (2), which emerge therefrom.

[0024] Having described the nature of the invention, as well as a preferred embodiment, it is obvious that the invention is susceptible of industrial application in the indicated sector.

[0025] Likewise, it is hereby stated for all appropriate purposes that the materials, shape, size, and arrangement of the described elements can be modified, provided that this does not entail an alteration of the essential features of the invention claimed below:

Claims

1. A brush for untangling hair, comprising a base (1) made of a plastic material, attached to a handle (5), in which on the outer face thereof a series of bristles (2) made of a flexible and elastic plastic material are introduced, anchored or integrated, **characterised in that** on the outer face of said base (1), at a height less than that of the bristles (2), a surface (3, 4, 11) protrudes occupying at least part of the surface of said base (1), preventing the hair from passing through the base of the bristles (2) during brushing.
2. The brush, according to claim 1, wherein the protruding surface of the base (1) protruding in the same direction as the bristles (2) forms at least a transverse partition (3, 4) with respect to the direction of movement of the hair during brushing.
3. The brush, according to claim 2, wherein the at least one transverse partition (3, 4) is located on the periphery of the base (1).
4. The brush, according to claims 2-3, wherein the at least one transverse partition (31, 41) is located on the inside of the surface of the base (1), substantially parallel to the periphery thereof.
5. The brush, according to claims 2-4, wherein at least one transverse partition (3, 31) is integrated and forms a single body with the base (1) and the bristles (2).
6. The brush, according to claims 2-4, wherein at least one transverse partition (4, 41) forms a body that is independent from the base (1), wherein it is joined by means of tongue-and-groove means (42) that allow the temporary removal and placement thereof in the operative position.
7. The brush, according to claim 1, wherein the surface (11) that protrudes from the base in the same direction as the bristles (2) makes up the base (1) itself, which has two levels, a lower one defined by holes or cavities in which the bristles (2) are introduced,

anchored or integrated, and an upper one, at a height lower than that of the bristles (2), which forms the protruding surface (11) that prevents the hair from passing through the base of the bristles (2) when brushing.

8. The brush, according to any of the preceding claims, wherein the base (1) comprises several transverse partitions (3), concentric with respect to said base (1), which define a series of channels (32) between the same, with a width similar to that of the bristles (2), which emerge therefrom.

Fig. 1

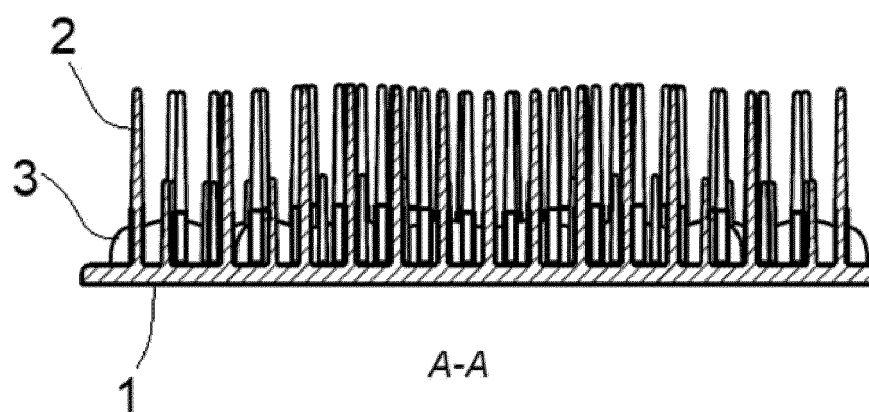


Fig. 2

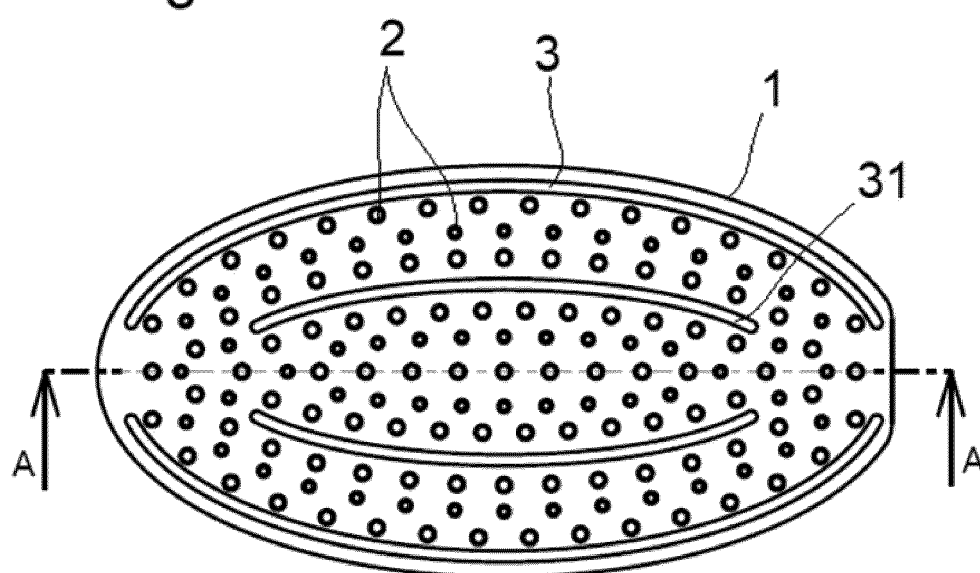


Fig. 3

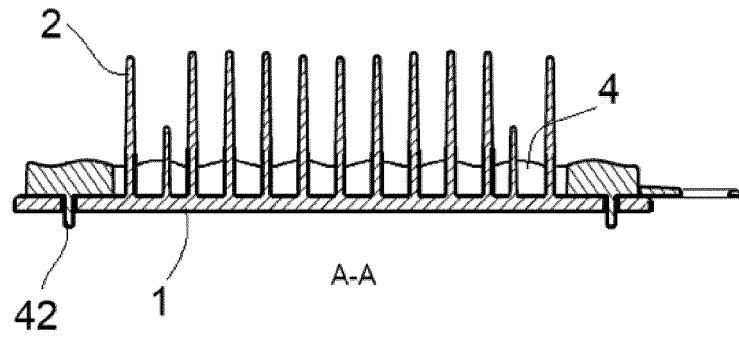


Fig. 4

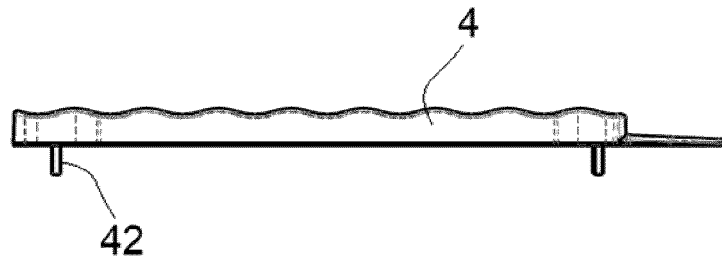
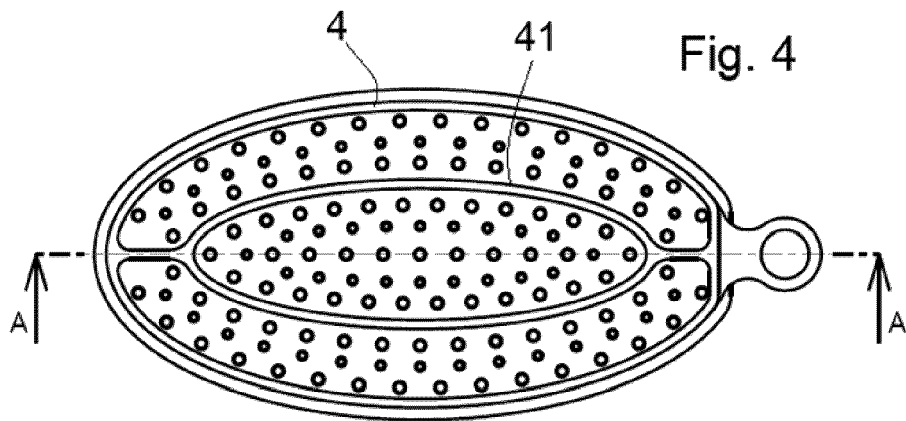
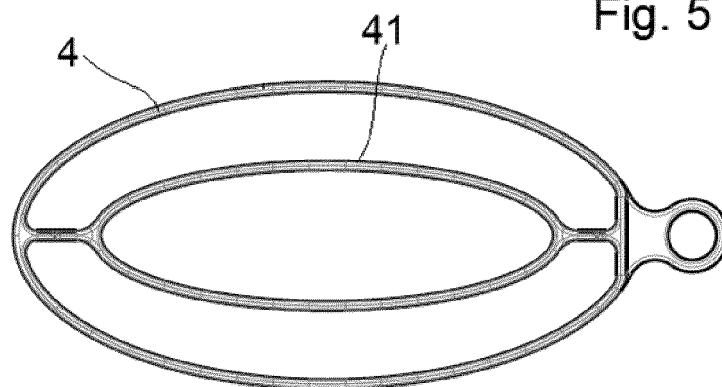


Fig. 5



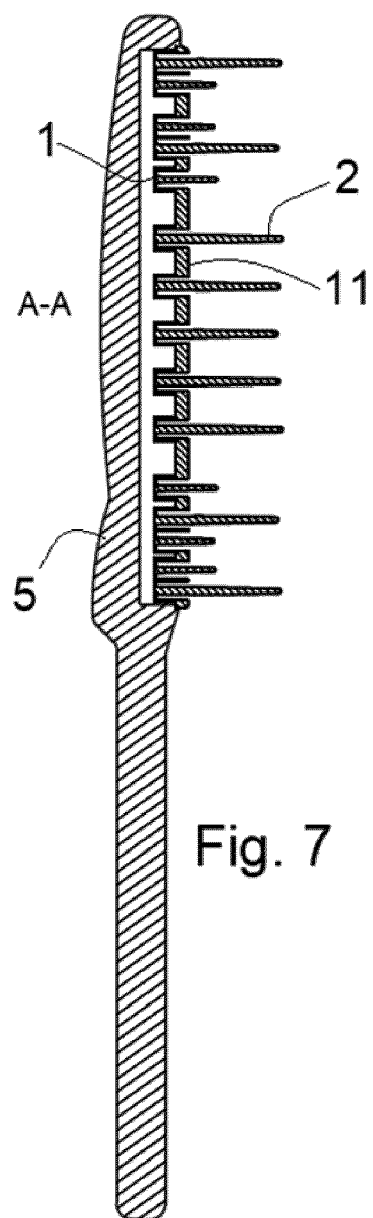
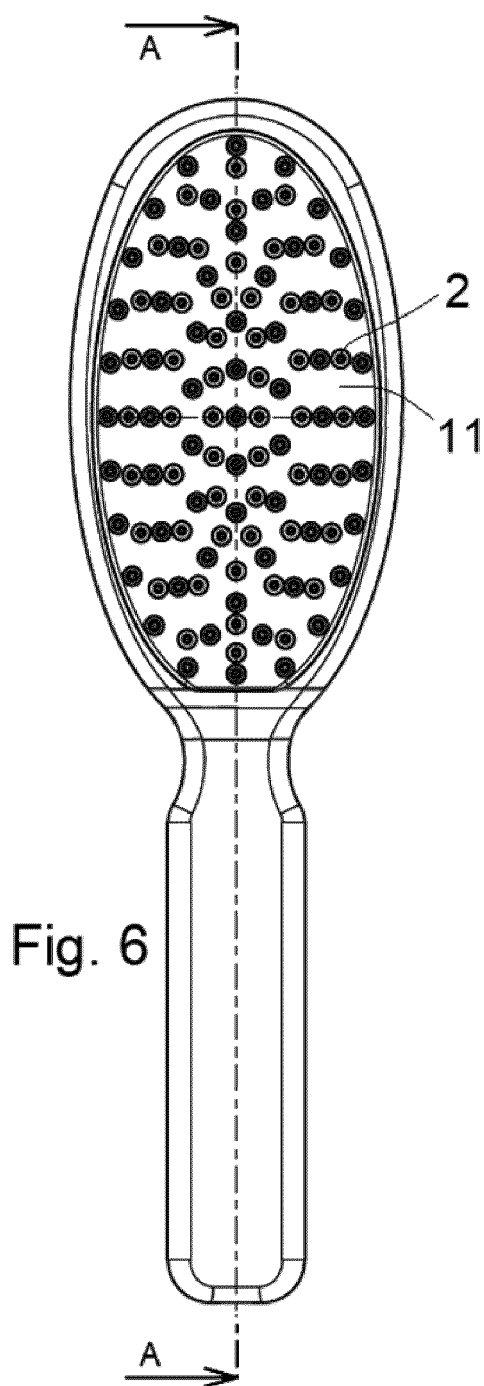


Fig. 8

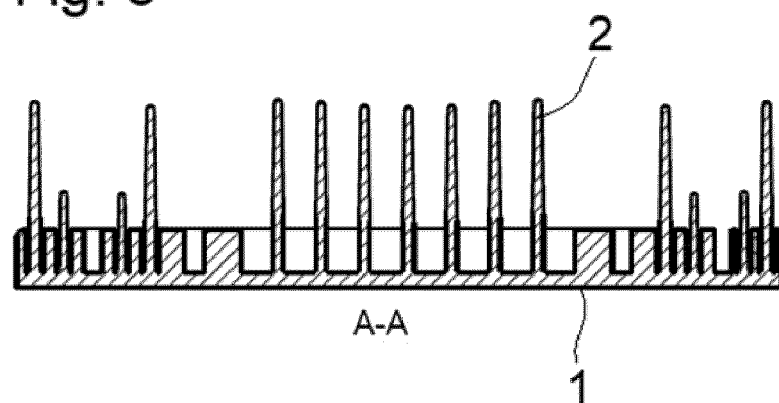
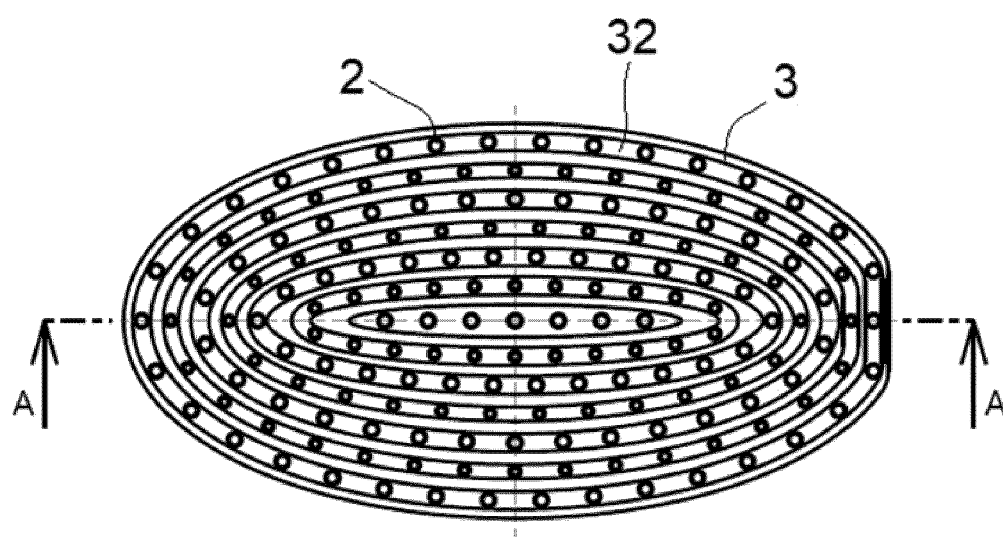


Fig. 9





EUROPEAN SEARCH REPORT

Application Number

EP 23 38 2642

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2012/167323 A1 (WILLIAMS ROBERTA CELESTE [US]) 5 July 2012 (2012-07-05) * paragraphs [0096], [0097], [0101], [0105], [0106], [0113]; figures 8, 9, 11, 15, 16 *	1-4, 6, 8	INV. A46B5/00 A46B9/02 A46B17/06
X	GB 2 007 500 A (BRAUN AG) 23 May 1979 (1979-05-23) * page 1, lines 14-18, 87-90, 99-104; figures 1-2 *	1, 2, 5, 7	
			TECHNICAL FIELDS SEARCHED (IPC)
			A46B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		16 November 2023	Rossini, Marco
CATEGORY OF CITED DOCUMENTS			
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2012167323 A1	05-07-2012	US 2012167323 A1	05-07-2012
		US 2014101879 A1	17-04-2014

GB 2007500 A	23-05-1979	DE 2750498 A1	23-05-1979
		FR 2408328 A1	08-06-1979
		GB 2007500 A	23-05-1979
		JP S5492452 A	21-07-1979

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 2607064 A [0003]
- EP 3432763 A1 [0006]
- EP 3254585 A1 [0007]
- EP 2124668 A1 [0008]